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09/522,727	03/10/2000	Wayne A Marasco	47577-C	5205

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EXAMINER
ROARK, JESSICA H

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/522,727	MARASCO ET AL.	
	Examin r	Art Unit	
	Jessica H. Roark	1644	

-- The MAILING DATE of this communication appears on th cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2003 and 06 August 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-17* is/are pending in the application.

4a) Of the above claim(s) *8-12,14,15 and 17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,13 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Applicant's amendment, filed 2/3/03 (Paper No. 34), is again acknowledged.
Claims cancelled: 6.
Claims pending: 1-5, 7-17.

2. Applicant's election with traverse of species of an undesired immune response that is tissue transplantation and a cell transduced that is an APC is acknowledged. The traversal is on the ground that the added species did not expand the subject matter and were therefore already searched. This is not found persuasive because when more than one species claims are presented following an action on a generic claim, Applicant must elect a single species. MPEP 809.02(d). Applicant also argues that tissue transplantation and bone marrow transplantation are not distinguishable; however, the art recognizes these to be distinct patient populations.

The requirement is still deemed proper and is therefore made FINAL.

Claims 8-12, 14-15 and 17 are withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b) as being drawn to a nonelected invention or species.

Claims 1-5, 7, 13 and 16 *are under consideration in the instant application.*

3. The supplemental oaths filed 5/21/03 and 8/6/03 are acknowledged.

4. This Office Action will be in response to applicant's arguments, filed 2/3/03 .
The rejections of record can be found in the previous Office Action.

It is noted that New Grounds of Rejection are set forth herein.

Claim Objections

5. Claim 1 is objected to for the following informality: the claim recites in the preamble a "method of inhabiting" when it appears a method of inhibiting was intended. Appropriate correction is required.

35 USC § 112 second paragraph

6. Applicant's amendment, filed 2/3/03,has obviated the previous rejections of claims 1-3 under 35 U.S.C. 112, second paragraph.

Claim Rejections – 35 U.S.C. §§ 102 and 103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-5, 7 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Marasco et al. (WO 94/02610, IDS #ΑΑ, see entire document).

Applicant's arguments, filed 2/3/03, have been fully considered but have not been found convincing.

As previously noted, Marasco et al. teach methods of intracellular binding of target molecules by expressing a gene encoding a single chain antibody in a cell (see entire document, e.g., Abstract and "Summary of the Invention" on pages 4-5). Marasco et al. teach that this method can be applied to disrupt a function that is undesirable at a particular time, including the recognition of antigens by the immune system at times when an immune response is undesired, as during transplantation of organs (see entire document, but especially page 16 lines 1-16). Marasco et al. further teach that undesired immune associated reactions can be down regulated by targeting MHC class I and MHC class II molecules (see especially page 16 at lines 1-16). MHC class I is itself a "component in the pathway involving MHC class I".

Although the elected invention of MHC class I alpha chain is not explicitly taught by Marasco et al., the alpha chain of class I is immediately envisaged by the ordinary artisan since the genus of molecules of which MHC class I is composed is only two species: the alpha chain and β2 microglobulin. (See In re Schauman, 572 F.2d 312, 197 USPQ 5 (CCPA 1978) and MPEP 2131.02.)

Applicant has argued in essence that the teachings of WO94/02610 are broad and do not teach the instantly elected specificities.

First it is noted that the generic language of instant claims 1-5 and 13 is not restricted to the MHC class I alpha chain embodiment. Second, as noted supra, the reference does set forth targeting of MHC class I, including in the context of tissue rejection. Targeting the unique alpha chain (as opposed to β_2m), would be immediately envisaged.

It is noted that the amendment filed 2/3/03 does not impact the rejection of record

Therefore, the Examiner maintains that the teachings of Marasco et al. anticipate the instant invention as recited.

Applicant is reminded that no more of the reference is required than that it sets forth the substance of the invention. The claimed functional limitations would be inherent properties of a single chain antibody to MHC class I used in the method taught by Marasco et al.

9. Claims 1-5, 7 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by any of the following:
Marasco et al. (U.S. Pat. No. 6,329,173, of record, see entire document);
Marasco et al. (U.S. Pat. No. 6,004,940, of record, see entire document); or
Marasco et al. (U.S. Pat. No. 5,965,371, of record, see entire document).

Each applied reference has a common Inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Applicant's arguments, filed 2/3/03, have been fully considered but have not been found convincing.

As previously noted, in each reference, Marasco et al. teach methods of intracellular binding of target molecules by expressing a gene encoding a single chain antibody in a cell (see entire document, e.g., Abstract and "Summary of the Invention" at columns 2-3 of the '173 and '371 references and at column 3 of the '940 reference). Marasco et al. also teach that this method can be applied to disrupt a function that is undesirable at a particular time, including the recognition of antigens by the immune system at times when an immune response is undesired, as in during transplantation of organs (see entire document, but especially column 7 of each reference). Marasco et al. further teach that undesired immune associated reactions can be down regulated by targeting MHC class I and MHC class II molecules (see especially column 7 at lines 18-36 of the '173 and '371 references, and at lines 4-22 of the '940 reference). MHC class I is itself a "component in the pathway involving MHC class I".

Although the elected invention of MHC class I alpha chain is not explicitly taught by any of the Marasco et al. references, the alpha chain of class I is immediately envisaged by the ordinary artisan since the genus of molecules of which MHC class I is composed is only two species: the alpha chain and β2 microglobulin. (See In re Schauman, 572 F.2d 312, 197 USPQ 5 (CCPA 1978) and MPEP 2131.02.)

Applicant again argues that the teachings of each reference are directed to specific embodiments other than those now claimed, and that the teachings do not provide the instantly elected specificities.

First it is noted that the generic language of instant claims 1-5 and 13 is not restricted to the MHC class I alpha chain embodiment. Second, as noted supra, the above noted references do set forth targeting of MHC class I, including in the context of tissue rejection. Targeting the unique alpha chain (as opposed to β_2m), would be immediately envisaged.

It is noted that the amendment filed 2/3/03 does not impact the rejection of record

Therefore, the Examiner maintains that the teachings of each Marasco et al. reference anticipate the instant invention.

Applicant is reminded that no more of the reference is required than that it sets forth the substance of the invention. The claimed functional limitations would be inherent properties of a single chain antibody to MHC class I used in the method taught by each Marasco et al. reference.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 7, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marasco et al. (WO 94/02610, IDS #AA) in view of Germain et al. (Annu. Rev. Immunol. 1993; 11:403-50, of record).

Applicant's arguments, filed 2/3/03, have been fully considered but have not been found convincing. Applicant's arguments are addressed below.

Claim 7 and claim 1 as limited to the elected invention are drawn to a method of inhibiting an undesired immune associated reaction by transducing a cell with a gene encoding an antibody that when expressed in the cell will bind a target molecule that is the MHC class I alpha chain.

Newly added claims 13 and 16 are drawn to inhibiting the immune associated reaction of tissue rejection by transducing an APC.

The teachings of Marasco et al. have been discussed supra.

The teachings of Marasco et al. differ from the instant invention by not explicitly teaching that it is the alpha chain of MHC class I that is bound by the antibody in the method and by not explicitly teaching that an APC should be transduced.

However, Marasco et al. do teach that the transduction technique can be used with essentially any human cell (page 46 at lines 3-6) and that the cell targeted is that which is susceptible to expression of the undesired target antigen (page 54 at lines 10-13).

Germain et al. review the art-recognized structure of the MHC class I and MHC class II molecules and their role in the stimulation of T cell-mediated immune responses (see entire document). Germain et al. teach that MHC class I is composed of two chains: the heavy chain which has three domains, α1-α3; and the light chain, β2 microglobulin. In addition, Germain et al. note that it is the α1 and α2 domains of the heavy chain (i.e., the alpha chain) that contacts peptide, and that β2 microglobulin provides structural support (see especially pages 405-406).

Germain et al. also teach that the art recognized that although MHC class I expression on the cell surface could be inhibited by blocking either the heavy/alpha chain or β2 microglobulin; that blocking β2 microglobulin did not eliminate all MHC class I from the surface of cells (e.g., see page 412-413, bridging paragraph).

Applicant argues that the teachings of Germain et al. do not render the specific elected embodiments obvious because Germain et al. simply provide the structure of MHC class I molecules.

However, the rejection does not rely upon only the teachings of Germain et al. Rather, the rejection notes the teachings of Germain et al. regarding the art-recognized structure of MHC class I in support of the argument that the ordinary artisan at the time the invention was made would, in combination with the teachings of Marasco et al., have found it obvious to target the alpha chain of MHC class I.

The Examiner maintains that, in view of the teachings of Marasco et al. to target MHC class I in order to suppress undesired immune responses, including tissue rejection as discussed supra; it would have been obvious to the ordinary artisan at the time the invention was made to target the MHC class I alpha chain, either by itself, or in combination with targeting of β2 microglobulin. The ordinary artisan at the time the invention was made would have been motivated to utilize an antibody that bound the MHC class I alpha chain, either alone or in combination with other antibodies, in the method taught by Marasco et al. in order to ensure that all MHC class I was blocked and the undesired immune response involving MHC class I was fully inhibited, as taught by Germain et al. In view of the numerous anti-class I alpha chain antibodies known in the art at the time the invention was made, including antibodies to the relatively nonpolymorphic α3 domain, the ordinary artisan at the time the invention was made would have had a reasonable expectation that antibodies that bound the MHC class I alpha chain could have readily been utilized in the method of Marasco et al.

With respect to the newly added claims, the Examiner notes that Marasco et al. teach the application of intrabodies for targeting of class I molecules in tissue rejection. In view of the teachings of Marasco et al to transduce a cell type susceptible to undesired expression of the target antigen, it would have also been obvious to the ordinary artisan at the time the invention was made to target APCs to inhibit tissue rejection because the art recognized that the importance of APCs in stimulating the immune response.

Therefore, the Examiner maintains that the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

The rejection is maintained as applied to the amended claims.

12. Claims 1, 7, 13 and 16 are rejected under 35 U.S.C. 103(a) as being obvious over <u>any of the</u> following:
Marasco et al. (U.S. Pat. No. 6,329,173, of record);
Marasco et al. (U.S. Pat. No. 6,004,940, of record); or
Marasco et al. (U.S. Pat. No. 5,965,371, of record) in view of
Germain et al. (Annu. Rev. Immunol. 1993; 11:403-50, of record).

Each applied primary reference has a common Inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Applicant's arguments, filed 2/3/03, have been fully considered but have not been found convincing. Applicant's arguments are addressed below.

Claim 7 and claim 1 as limited to the elected invention are drawn to a method of inhibiting an undesired immune associated reaction by transducing a cell with a gene encoding an antibody that when expressed in the cell will bind a target molecule that is the MHC class I alpha chain.

Newly added claims 13 and 16 are drawn to inhibiting the immune associated reaction of tissue rejection by transducing an APC.

The teachings of Marasco et al. have been discussed supra.

The teachings of each Marasco et al. reference differ from the instant invention by not explicitly teaching that it is the alpha chain of MHC class I that is bound by the antibody in the method.

However, Marasco et al. do teach that the transduction technique can be used with essentially any human cell (e.g., the '173 patent at column 21 at lines 46-62) and that the cell targeted is that which is susceptible to expression of the undesired target antigen (e.g., the '173 patent at column 25 at lines 29-60).

Germain et al. review the art-recognized structure of the MHC class I and MHC class II molecules and their role in the stimulation of T cell-mediated immune responses (see entire document). Germain et al. teach that MHC class I is composed of two chains: the heavy chain which has three domains, α1-α3; and the light chain, β2 microglobulin. In addition, Germain et al. note that it is the α1 and α2 domains of the heavy chain (i.e., the alpha chain) that contacts peptide, and that β2 microglobulin provides structural support (see especially pages 405-406).

Germain et al. also teach that the art recognized that although MHC class I expression on the cell surface could be inhibited by blocking either the heavy/alpha chain or β2 microglobulin; that blocking β2 microglobulin did not eliminate all MHC class I from the surface of cells (e.g., see page 412-413, bridging paragraph).

Applicant argues that the teachings of Germain et al. do not render the specific elected embodiments obvious because Germain et al. simply provide the structure of MHC class I molecules.

However, the rejection does not rely upon only the teachings of Germain et al. Rather, the rejection notes the teachings of Germain et al. regarding the art-recognized structure of MHC class I in support of the argument that the ordinary artisan at the time the invention was made would, in combination with the teachings of Marasco et al., have found it obvious to target the alpha chain of MHC class I.

The Examiner maintains that, in view of the teachings of Marasco et al. to target MHC class I in order to suppress undesired immune responses, including tissue rejection as discussed supra; it would have been obvious to the ordinary artisan at the time the invention was made to target the MHC class I alpha chain, either by itself, or in combination with targeting of β2 microglobulin. The ordinary artisan at the time the invention was made would have been motivated to utilize an antibody that bound the MHC class I alpha chain, either alone or in combination with other antibodies, in the method taught by Marasco et al. in order to ensure that all MHC class I was blocked and the undesired immune response involving MHC class I was fully inhibited, as taught by Germain et al. In view of the numerous anti-class I alpha chain antibodies known in the art at the time the invention was made, including antibodies to the relatively nonpolymorphic α3 domain, the ordinary artisan at the time the invention was made would have had a reasonable expectation that antibodies that bound the MHC class I alpha chain could have readily been utilized in the method of Marasco et al.

With respect to the newly added claims, the Examiner notes that Marasco et al. teach the application of intrabodies for targeting of class I molecules in tissue rejection. In view of the teachings of Marasco et al to transduce a cell type susceptible to undesired expression of the target antigen, it would have also been obvious to the ordinary artisan at the time the invention was made to target APCs to inhibit tissue rejection because the art recognized that the importance of APCs in stimulating the immune response.

Therefore, the Examiner maintains that the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

The rejection is maintained as applied to the amended claims.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1-5 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 and 18-22 of U.S. Pat. No. 6,329,173, of record; claims 18-20 and 28-30 of U.S. Pat. No. 6,004,940, of record; or claims 1-7, 20, 28, 41-48, 58-62, 71-81 and 91-100 of U.S. Pat. No. 5,965,371, of record.

Applicant did not specifically address this rejection in the response filed 2/3/03.

Although the conflicting claims are not identical, they are not patentably distinct from each other because each of the U.S. Patents claims methods for the intracellular binding of a target antigen by intracellular delivery of an antibody into a cell by delivering the nucleic acid encoding the antibody into the cell. Although the method steps are more detailed than claimed in the instant Application, the conflicting patents and the instant claims each utilize the same general method steps to achieve intracellular antibody binding of a target antigen.

The specification of each patent discloses at column 7 that MHC class I is a contemplated embodiment of the protein target antigen recited in the claims of each U.S. Patent. It would therefore have been obvious to the ordinary artisan at the time the invention was made to apply the method recited in each U.S. Patent to a target antigen that was MHC class I. In addition, column 7 of each U.S. Patent discloses that the recited method of intracellular binding of a target molecule that is MHC class I results in the inhibition of an undesired immune associated reaction, as recited in the instant claims. It would therefore have also been obvious to the ordinary artisan at the time the invention was made to apply the method recited in each U.S. Patent to inhibit an undesired immune associated reaction. The ordinary artisan would have been motivated to apply the method of intracellular binding of a target antigen that was MHC class I in order to inhibit undesired immune associated reactions in situations such a transplantation of organs, as also disclosed.

The amendment filed 2/3/03 does not appear to affect the rejection of record. Therefore, the Examiner maintains that the instant claims appears to be an obvious variation of the claims recited in each U.S. Patent.

15. Claims 1, 7, 13 and 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 and 18-22 of U.S. Pat. No. 6,329,173, of record; claims 18-20 and 28-30 of U.S. Pat. No. 6,004,940, of record; or claims 1-7, 20, 28, 41-48, 58-62, 71-81 and 91-100 of U.S. Pat. No. 5,965,371, of record, each in view of Germain et al. (Annu. Rev. Immunol. 1993; 11:403-50, of record).

Applicant did not specifically address this rejection in the response filed 2/3/03.

Claim 7 and claim 1 as limited to the elected invention are drawn to a method of inhibiting an undesired immune associated reaction by transducing a cell with a gene encoding an antibody that when expressed in the cell will bind a target molecule that is the MHC class I alpha chain.

Newly added claims 13 and 16 are drawn to inhibiting the immune associated reaction of tissue rejection by transducing an APC.

The claimed invention of each referenced U.S. Patent have been discussed supra.

The claimed inventions of each referenced U.S. Patent differ from the instant invention by not explicitly reciting that it is the alpha chain of MHC class I that is bound by the antibody in the method and by not teaching transduction of an APC.

However, each U.S. Patent does teach that the transduction technique can be used with essentially any human cell (e.g., the '173 patent at column 21 at lines 46-62) and that the cell targeted is that which is susceptible to expression of the undesired target antigen (e.g., the '173 patent at column 25 at lines 29-60).

Germain et al. have also been discussed supra in the rejection of the instant claims under 35 USC 103(a).

As noted supra, it would have been obvious to the ordinary artisan at the time the invention was made to target the MHC class I alpha chain, either by itself, or in combination with targeting of β2 microglobulin. The ordinary artisan at the time the invention was made would have been motivated to utilize an antibody that bound the MHC class I alpha chain, either alone or in combination with other antibodies, in an obvious variation of the methods claimed by each U.S. Patent, as set forth supra, in order to ensure that all MHC class I was blocked and the undesired immune response involving MHC class I was fully inhibited. Therefore, the instant claims drawn to the elected invention of a method of inhibiting an undesired immune associated reaction by transducing a cell with a gene encoding an antibody that when expressed in the cell will bind a target molecule that is the MHC class I alpha chain appears to be an obvious variation of the above noted claims recited in each U.S. Patent.

With respect to the newly added claims, the Examiner notes that each U.S. Patent teaches the application of intrabodies for targeting of class I molecules in tissue rejection. In view of the teachings of each U.S. Patent to transduce a cell type susceptible to undesired expression of the target antigen, it would have also been obvious to the ordinary artisan at the time the invention was made to target APCs to inhibit tissue rejection because the art recognized that the importance of APCs in stimulating the immune response.

Therefore, the Examiner maintains that the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

The rejection is maintained as applied to the amended claims.

16. Claims 1-5, 7, 13 and 16 are directed to an invention not patentably distinct from claims 1-11 and 18-22 of U.S. Pat. No. 6,329,173, of record; claims 18-20 and 28-30 of U.S. Pat. No. 6,004,940, of record; or claims 1-7, 20, 28, 41-48, 58-62, 71-81 and 91-100 of U.S. Pat. No. 5,965,371, of record, for the reasons set forth supra.

Applicant did not specifically address this rejection in the response filed 2/3/03.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned U.S. Pat. No. 6,329,173; U.S. Pat. No. 6,004,940; or U.S. Pat. No. 5,965,371, each discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee is required under 37 CFR 1.78(c) and 35 U.S.C. 132 to either show that the conflicting inventions were commonly owned at the time the invention in this application was made or to name the prior inventor of the conflicting subject matter. Failure to comply with this requirement will result in a holding of abandonment of the application.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

Conclusion

17. No claim is allowed.

18. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. This application contains claims 8-12 drawn to an invention nonelected with traverse in Paper No. 11. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica H. Roark, whose telephone number is (703) 605-1209. The examiner can normally be reached Monday to Friday, 8:00 to 4:30. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached at (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 872-9306.

Jessica Roark, Ph.D.
Patent Examiner
Technology Center 1600
November 18, 2003

PHILLIP GAMBEL, PH.D
PRIMARY EXAMINER
TECH CENTER 1600
11/19/03